

It's Not a Big Truck

Examining Cyber Metaphors

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Former Senator Ted Stevens became the butt of many late night talk show jokes and achieved YouTube immortality in June of 2006 when he said the Internet is “not a big truck. It’s a series of tubes.” Along with inadvertently creating a new Internet meme [*a catchphrase or idea that spreads online*], the senator’s unfortunate attempt to explain the Internet highlights both the central role of metaphor in human understanding and the confusion surrounding this global collection of interconnected computers.

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Regular readers may recall that in the November-December 2008 issue of *Defense AT&L*, we examined the topic of metaphors in an article titled “Metaphors Are Mindfunnels.” Inspired in equal measure by George Lakoff and Mark Johnson’s book *Metaphors We Live By* and the Matrix movies, the article discussed the way metaphors expose and obscure various aspects of reality. Building on Lakoff’s and Johnson’s observation that “the primary function of metaphor is to provide a partial understanding of one kind of experience in terms of another kind of experience,” we went on to explain that a “good metaphor improves our understanding of the environment and leads to constructive, productive, positive action. It reveals more than it hides—or at the very least, it reveals the critical aspects while obscuring the less important aspects.” We coined the term “mindfunnels” in the article to illustrate the way metaphors influence our perception of the world around us.

Cyber Metaphors

Senator Stevens’ infamous tube metaphor got us thinking about cyber metaphors and the way they shape our understanding of the Internet. But let’s be clear—when the senator described the Internet as a series of tubes, he wasn’t offering a literal description. Instead, he was metaphorically describing one thing (the Internet) in terms of something else (a series of tubes). The truth is, his imagery was not entirely incorrect, but neither was it entirely complete. Like all metaphors, his description expressed only “a partial understanding.” Perhaps there are other metaphors we could use instead, metaphors that might shine a useful light on some of the more critical aspects of the Internet and funnel our perceptions in a productive direction ... metaphorically speaking, of course.

As we move forward on this path of understanding and awareness, it is important to be mindful of as many hidden metaphorical constructs as possible. So before we get too far down the line, we need to introduce a placeholder word. Instead of referring to the Internet or cyberspace, let's just call it the Thing for now. This is necessary because the terms cyberspace and Internet are themselves ... (drum roll please) metaphorical!

Location versus Tool

Upon closer examination, the word "cyberspace" is built on a <thing is location> metaphor. In that framework, the Thing is viewed as a geographic place in which people can visit and move around (cyberspace even contains the word space). Just look at the language we use to talk about our interactions when we think of the Thing as cyberspace: we go online, visit Web sites, count the number of visitors to our home pages, build store fronts, and use social media sites to establish our presence in this parallel world. Terms like "hosting" and "domain" are further examples of the geographic metaphor.

On the other hand, the word "Internet" is based on a <thing is tool> metaphor. The tool in question is a connective network (a series of tubes, if you will) or a web we use to enable our business dealings, maintain social connections, and satisfy our information requirements. In other words, it is a network to use, not a location to visit. We talk about how it improves communication, lowers costs, and shortens timelines—those are attributes of a tool, not a location. Of course, the lines between these metaphors are occasionally blurred, and people sometimes use location words when talking about the Internet and tool words when talking about cyberspace. That is known as a mixed metaphor.

Cyber Metaphor in Government

As you might expect, various parts of the federal government use different cyber metaphors, many of them a variant on the popular geographical construct. The Department of Defense, for example, uses the term cyberspace, but views the Thing as a particular kind of place known as a battlefield. In that metaphor, cyberspace is a location where combatants go to perform reconnaissance, collect intelligence, attack targets, and take defensive actions. The military talks about training cyberwarriors and building a fleet of cybercraft to operate in this place. The Air Force, in particular, describes cyberspace as a third battle domain, alongside

air and space. This <thing is location> idea may indeed be a good metaphor, and it is certainly the predominant one of the moment. However, like all metaphors, it both conceals and reveals. Upon closer analysis, we may discover that it is filtering out something important. More on that in a moment.

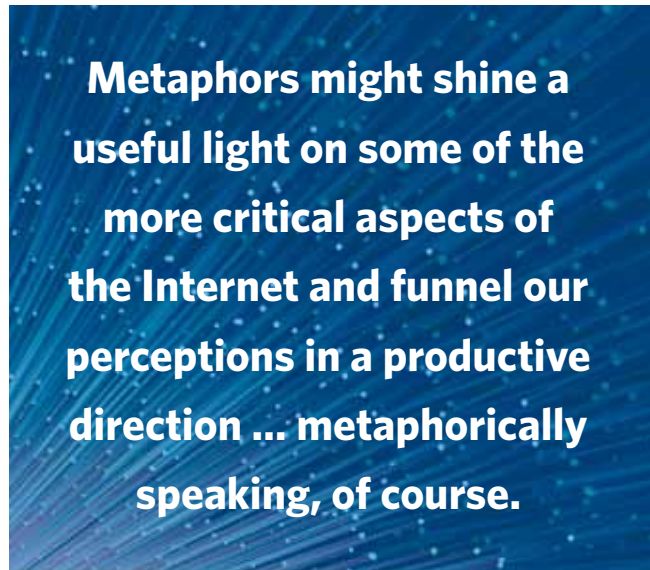
Law enforcement agencies like the FBI also think of the Thing as cyberspace, but view it as a potential crime scene instead of a battlefield. It is a place where they go in order to perform investigations; gather evidence; protect potential victims; and assess the means, motive, and opportunity of suspects. The common underlying <thing is location> metaphor creates a lot of similarity between the military and law enforcement interactions

online, but the different battlefield/crime scene metaphors lead to a divergence in both understanding and behavior. While gathering intelligence and gathering evidence may both be viewed as data collection activities, the rules surrounding each are quite different; and thus, the tools, techniques, and methods applied will differ significantly. If the FBI thought it was entering a battlefield, or the military thought it was operating in a crime scene, their behaviors would probably be quite different.

The Power of Metaphor

Something funny is going on here, and it has to do with the nature of metaphor. Recall that a metaphor describes one thing in terms of something else. It does not describe the thing in terms of itself or its constituent parts. That is what literal descriptions are for. Ironically, that means the one thing a metaphor can definitely tell us is what the object is not. We can say "a book is a gateway to a new world" only because it is not a gateway to a new world. Literally speaking, a book is actually just a 12-ounce stack of paper with ink on it. And yet, the metaphorical description tells us more about the experience of reading a book than the scientifically literal description does. This is the power—and the danger—of metaphor.

So, when we say the Thing is a parallel world, what we are actually saying is it is not a parallel world, just as a book is not literally a gateway. We metaphorically describe it as a place because it is not a place. We can think of it as one for convenience, but we must not mistake the imagery for a literal description. This means Senator Stevens was right on at least one count. The Thing—cyberspace, the Internet,



the magical series of tubes—is not a big truck. It is also not a series of tubes or a location, nor is it a tool, a network, or a web that stretches around the world. It is clearly useful to think of the Thing in these terms, but these images are metaphorical, not literal.

The Illusion of Real

Let's say this again: metaphors are not literal descriptions. They are convenient fictions. We all know this, of course, but it bears repeating for one big reason: Many of the metaphors we use are invisible to us. When we fail to see metaphors for what they are, we run the risk of mistaking things for what they are not. As Albert Einstein explained, "One is in danger of being misled by the illusion that the 'real' of our daily experience 'exists really.'"¹ He was talking about relativity, but his warning applies to our other mindfunnels just as well. His warning certainly applies to the CyberThing.

Here's the rub: People involved in national-level cybersecurity efforts, using the <thing is location> metaphor, often talk about "defending the borders of cyberspace." That is a natural conclusion to make, given the imagery involved. Places have borders. Cyberspace is a place. Therefore, it must have a border, and that border must be defended. Unfortunately, this is an instance where the geographic imagery breaks down, because the Thing doesn't recognize boundaries or borders. Not really.

Yes, a particular network may have colorfully named features like firewalls, but it still sends 1's and 0's over many of the same wires as other networks. It may have gateways and backdoors, but it still relies on routers, servers, and various hardware components that are simultaneously a critical part of the network and are often, in a very real sense, on the other side of the "border." Similarly, two networks operating at different classification levels (to use a theoretical example) may appear to be independent, but in reality, are sufficiently intertwined that we can't always say for sure what would happen to one if the other goes down. So much for boundaries. Furthermore, a person operating in one domain may appear (deliberately or inadvertently) to be in a different domain altogether. So, the lines are not as neatly drawn as they are in the world of physical geography.

This does not mean the <thing is location> metaphor is entirely wrong. It simply means it is only a partial representation, a half-truth, a convenient fiction. In other words, it is a metaphorical representation, not a literal description. We ignore this fact at our peril, and people who publically misunderstand the Internet run the very real risk of inadvertently creating their very own meme. That's not nearly as fun as creating a meme on purpose.

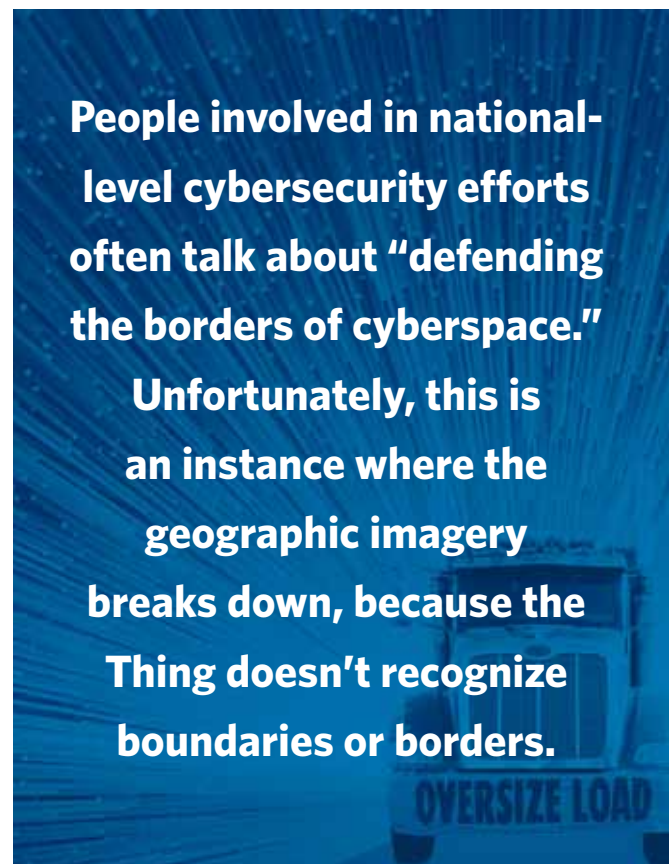
Mixing and Matching

OK, time for some good news. While metaphors offer only partial explanations, we should also bear in mind that they

are not inevitable. For any given entity or experience, we can create a number of metaphors. We can even use more than one at a time, mixing and matching them in such a way as to reveal with one metaphor an aspect that is concealed by another.

So, while the <thing is location> metaphor (and the accompanying term cyberspace) has much to commend it, it might be worthwhile to consider some alternatives. These metaphors need not replace the concept of the Thing as a location. Rather, when pondered in parallel, they might help us get a better handle on what this Thing really is.

CyberTool: If we use a <thing is tool> metaphor, we might try to make the handle more ergonomic—or we might develop different types of handles for different situations. We might consider different uses, attachments, and applications for this tool, just like a vacuum cleaner or Dremel™ tool. We might try to reduce friction among the components. We could try to fill in the blank: "If the only tool you have is an Internet, all your problems look like _____." And just as the <thing is location> imagery has submetaphors like battlefields and crime scenes, the <thing is tool> approach might produce more specific images, such as the nearly literal <thing is communication system> or the more fanciful <thing is vehicle>. If it was a vehicle, where would it take us? Where is the gas pedal or the break? Who has their hands on the steering wheel? Is it a bus, a train, or a motorcycle? In what sense might it even be a big truck?



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CyberPlant: Using a <thing is plant> metaphor, we might find ourselves considering things like sunlight, fertilizer, and water. If the Internet is vegetation, what fruit or flower does it produce? Does the term pruning have any meaning in this framework? What cultivation do we need to do in order to achieve our objectives? Is it a vine or a tree? Is it grass? Dandelions? Kelp?

CyberPerson: What if we think of it as a person? Would we describe it as godlike or childlike ... or both? Would it be a Frankenstein's monster or a Superman? A golem or a genie? A schizophrenic mental patient or a Zen master? Is it more like John Henry or Johnny Appleseed? Could it be trained and educated? What language does it speak? What does it need? If futurist and author Ray Kurzweil is right that *The Singularity is Near* (as he titled his 2005 book about artificial intelligence), this metaphor might very well be worth pondering.

The point is that metaphors are neither literal nor inevitable. Any given experience or entity can be metaphorically described in nearly boundless ways. Each of these figurative descriptions will convey certain truths and attributes while downplaying others. That does not mean we should avoid metaphors. In fact, we could not abandon the use of metaphor even if we wanted to because metaphor is the key to understanding just about everything. It's just how our brain works. Metaphor helps us make sense of new experiences and provides an imaginative richness and depth far beyond merely literal descriptions. A book is more than a stack of paper and ink, just as the Internet is more than a global collection of computers joined by wires. But we must be aware of the metaphors around us. And when it comes to the Internet, the one thing we need to keep in mind is this: It is not a big truck.

The author welcomes comments and questions and can be contacted at daniel.ward@pentagon.af.mil.

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